UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

AUG 22 2017

REPLY TO THE ATTENTION OF:

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. Erik Sims
Environmental Manager
AMG Vanadium, Inc.
60790 Southgate Road
Cambridge, Ohio 43725

Re: Notice and Finding of Violation
AMG Vanadium, Inc.
Cambridge, Ohio

Dear Mr. Sims:

The U.S. Environmental Protection Agency is issuing the enclosed Notice of Violation and Finding of Violation (NOV/FOV) to AMG Vanadium, Inc. (you) under Section 113(a) of the Clean Air Act (CAA), 42 U.S.C. § 7413(a). We find that you have violated the Ohio State Implementation Plan and the CAA at your Cambridge, Ohio facility.

Section 113 of the Clean Air Act gives us several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the NOV/FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the NOV/FOV prior to the conference date.

Please plan for your facility's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference.

The EPA contact in this matter is Alexandra Letuchy. You may call her at (312) 886-6035 to request a conference. You should make the request within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

Edward Nam, Director
Air and Radiation Division

cc: Robert Hodanbosi, Chief
Division of Air Pollution Control
Ohio Environmental Protection Agency

Jessica Kuenzli, APC Manager
Southeast District Office
Ohio Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

IN THE MATTER OF:	)	
	)	
AMG Vanadium, Inc.	)	**NOTICE OF VIOLATION and**
Cambridge, Ohio	)	**FINDING OF VIOLATION**
	)	
	)	**EPA-5-17-OH-13**
Proceedings Pursuant to	)	
the Clean Air Act	)	
42 U.S.C.§ § 7401 et seq	)	

NOTICE OF VIOLATION AND FINDING OF VIOLATION

The U.S. Environmental Protection Agency is issuing this Notice of Violation and Finding of Violation (NOV/FOV) to AMG Vanadium, Inc. (AMG or you) to notify you that we have found violations of the Clean Air Act (CAA or the Act), 42 U.S.C. §§ 7401-7671q, at the facility located at 60790 Southgate Road, Cambridge, Ohio (the Facility). The relevant statutory and regulatory background, factual background, alleged violations, and environmental impact of these violations are set forth in detail below.

This NOV/FOV is issued in accordance with Sections 113(a)(1) and (a)(3) of the CAA, 42 U.S.C. §§ 7413(a)(1) and (a)(3), which authorize the Administrator to take certain enforcement actions after notifying a person that it is in violation of the CAA. The Administrator has delegated the authority to issue this NOV/FOV to the Regional Administrator, who in turn has re-delegated that authority to the Director of the Air and Radiation Division for Region 5 of the EPA.

Relevant Statutory and Regulatory Background

Statutory and Regulatory Background

1. The CAA is designed to, among other things, protect and enhance the quality of the nation's air so as to promote the public health and welfare and the productive capacity of its population. Section 101(b)(1) of the CAA, 42 U.S.C. § 7401(b)(1).

Recordkeeping, Inspections, Monitoring, and Entry

2. Section 114 of the Act, 42 U.S.C. § 7414(a), authorizes the Administrator of EPA to require the submission of information for purposes of determining whether any person is in violation of any standard or any requirement of a State Implementation Plan developed pursuant to 42 U.S.C. § 7410.

National Emission Standards for Hazardous Air Pollutants

3. Section 112 of the Act, 42 U.S.C. § 7412, requires EPA to promulgate a list of all categories and subcategories of major sources and area sources of hazardous air pollutants (HAPs) and establish emissions standards for the categories and subcategories. These emission standards are known as the National Emission Standards for Hazardous Air Pollutants (NESHAPs).

4. Pursuant to Section 112(b) of the CAA, 42 U.S.C. § 7412(b), EPA designates HAPs, which present or may present a threat of adverse effects to human health or the environment.

5. Pursuant to Section 112(c) of the CAA, 42 U.S.C. § 7412(c), EPA promulgated a list of categories and subcategories of major sources of the air pollutants listed pursuant to Section 112(b) of the CAA, 42 U.S.C. § 7412(b).

6. Pursuant to Section 112(d) of the CAA, EPA promulgated regulations implementing the NESHAP at 40 C.F.R. Part 63. The purpose of the NESHAP is to ensure that all sources achieve the maximum degree of reduction in emissions of HAPs that EPA determines is achievable for each source category.

7. Section 112(a) of the CAA, 42 U.S.C. § 7412(a), and 40 C.F.R. § 63.2 define "major source" as any stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year (TPY).

8. Section 112(i)(3) of the CAA, 42 U.S.C. § 7412(i)(3), and 40 C.F.R. § 63.4, prohibit the owner or operator of any source from operating such source in violation of any NESHAP applicable to such source.

9. The NESHAP, at 40 C.F.R. Part 63, Subpart A, contains general provisions applicable to the owner or operator of any stationary source that contains an affected source subject to the NESHAP at Part 63. These general provisions include definitions at 40 C.F.R. § 63.2.

10. The NESHAP, at 40 C.F.R. § 63.2, defines "affected source" as the collection of equipment, activities, or both within a single contiguous area and under common control that is included in a CAA Section 112(c) source category or subcategory for which a Section 112(d) standard or other relevant standard is established pursuant to Section 112 of the CAA.

11. The NESHAP, at 40 C.F.R. § 63.2, defines "existing source" as any affected source that is not a new source.

12. The NESHAP, at 40 C.F.R. § 63.2, defines "new source" as any affected source the construction or reconstruction of which is commenced after EPA first proposes a relevant emission standard under 40 C.F.R. Part 63, establishing an emission standard applicable to such source.

NESHAP Area Sources: Ferroalloys Production Facilities at 40 C.F.R. Part 63, Subpart YYYYYY

13. On December 23, 2008, EPA promulgated the NESHAP for Area Sources: Ferroalloys Production Facilities (Subpart YYYYYY), codified at 40 C.F.R. Part 63, Subpart YYYYYY. 73 Fed. Reg. 78643.

14. Subpart YYYYYY, at 40 C.F.R. § 63.11525(a), provides that owners and operators of an existing affected source must comply with the requirements for existing sources no later than June 22, 2009.

15. Subpart YYYYYY, at 40 C.F.R. § 63.11526(a), provides that owners and operators shall "not discharge to the atmosphere visible emissions (VE) from the control device that exceed 5 percent of accumulated occurrences in a 60-minute observation period."

Ohio SIP

16. Effective February 28, 2005, EPA approved OAC 3745-18-06 as part of the federal enforceable Ohio SIP. 70 Fed. Reg. 4023.

17. OAC 3745-18-06(E)(2) states that no owner or operator of any process equipment shall cause or permit the maximum emission of sulfur dioxide from any source to exceed the allowable emission rate indicated by the following equation:

$$AER = 30*P^{0.67}$$

Where P is the process weight rate in tons per hour and AER is the allowable emission rate in pounds of sulfur dioxide per hour.

18. Effective January 21, 2014, EPA approved OAC 3745-18-06 as part of the federal enforceable Ohio SIP. 78 Fed. Reg. 69299.

19. OAC 3745-18-06(E)(2) states that no owner or operator of any process equipment shall cause or permit the maximum emission of sulfur dioxide from any source to exceed the allowable emission rate indicated by the following equation:

$$AER = 30*P^{0.67}$$

Where P is the process weight rate in tons per hour and AER is the allowable emission rate in pounds of sulfur dioxide per hour.

2002 Permit to Install

20. Ohio EPA issued to the Facility a Permit to Install, No. PTI-06-05869 effective May 23, 2002 (2002 PTI), which established conditions for emission unit P014 (Roaster #1).

21. Condition Part III.P014.A.I.1 of the 2002 PTI states that SO_2 emissions from Roaster #1 shall not exceed 78.1 lbs/hr.

22. Condition Part III.P014.A.I.2.a of the 2002 PTI states that the emissions from Roaster #1 shall be vented to a dry scrubber and a baghouse.

2011 Permit to Install

23. Ohio EPA issued to the Facility a Permit to Install, No. P0108340 effective November 4, 2011 (2011 PTI), which established conditions for emission unit P020 (Roaster #2).

24. Condition C.1.b.(1)b. of the 2011 PTI states that the PM10/2.5 emission limit for Roaster #2 is 0.007 grains/dry standard cubic foot and 8.4 tons per year.

25. Condition C.1.f(1)a. of the 2011 PTI states the following with respect to the PM10/2.5 emission limit for Roaster #2: "Compliance with the annual emission limitation shall be demonstrated by multiplying the maximum flow rate through the baghouse (in dscfm) by the short term emission rate (in gr/dscf) determined during the most recent stack test, multiplying by 525,600 min/year, and dividing by 7,000 gr/lb and 2,000 lbs/ton."

26. Condition C.1.b.(1)d. of the 2011 PTI states that SO_2 emissions from Roaster #2 shall not exceed 78.1 lbs/hr as a 3-hour, rolling average.

27. Condition C.1.b.(2)a. of the 2011 PTI states that the emissions from the Roaster #2 shall be vented to an operating circulating dry scrubber and a baghouse.

July 2014 Permit to Install

28. Ohio EPA issued a Permit to Install, No. P0116720 effective July 18, 2014 (July 2014 PTI) to the Facility on July 18, 2014.

29. Condition C.1.b.(1)a. of the July 2014 PTI states that the permittee shall install a baghouse controlling emissions from emissions unit P011 (Furnace # 1), designed to meet 100% capture and 99% control for particulate emissions (PE), PM_{10}, and $PM_{2.5}$.

October 2014 Permit to Install

30. Ohio EPA issued to the Facility a Permit to Install, No. P0110438 effective October 7, 2014 (October 2014 PTI), which established conditions for Roaster #1 and Roaster #2.

31. Condition C.2.b.(1)d. of the October 2014 PTI states that SO_2 emissions from Roaster #2 shall not exceed 78.1 lbs/hr as a 3 hour, rolling average.

32. Condition C.2.b.(2)a. of the October 2014 PTI states that the emissions from Roaster #2 shall be vented to an operating circulating dry scrubber and a baghouse.

Relevant Factual Background

33. AMG owns and operates a ferrovanadium manufacturing facility located at 60790 Southgate Road, Cambridge, Ohio (the Facility).

34. The Facility produces ferrovanadium and other ferroalloys, and is thus considered a ferroalloys production facility under Subpart YYYYYY.

35. The Facility has operated since before September 15, 2008, and is thus considered an existing source under Subpart YYYYYY.

36. EPA conducted an inspection of the facility on December 14, 2015 (2015 inspection).

37. On June 1, 2016, EPA issued information requests to the Facility under Section 114 of the CAA, 42 U.S.C. § 7412 (2016 request).

38. On February 27, 2017, EPA issued information requests to the Facility under Section 114 of the CAA, 42 U.S.C. § 7412 (2017 request).

39. AMG provided responses to the information requested dated June 30, 2016, July 7, 2016, August 8, 2016, and April 4, 2017. AMG also provided a supplemental response dated June 21, 2017.

40. The Facility operates two electric arc furnaces, Furnace #1 and Furnace #2.

41. Emissions generated at Furnace #1 are controlled by Baghouse #1 and emissions generated at Furnace #2 are controlled by Baghouse #2.

42. The Facility operates two Multiple Hearth Roasters, Roaster #1 and Roaster #2.

43. Emissions generated at Roaster #1 and Roaster #2 are controlled by a dry scrubber and a baghouse.

44. SO_2 emissions from the Roaster #1 and Roaster #2 dry scrubber are monitored by a Continuous Emissions Monitoring System (CEMS).

45. As of the effective date of this NOV/FOV, Roaster #1 and Roaster #2 have never run simultaneously.

Requested 2014 Modeling Data

46. In the 2017 request, EPA requested the most recent air dispersion modeling that was previously conducted for the facility.

47. In AMG's response to the 2017 request, AMG claimed modeling performed in 2014 (2014 Modeling) as Attorney-Client Privilege and did not provide the requested information.

48. As of July 20, 2017, AMG has not provided the following information related to the 2014 Modeling:

a. Input and output files for all modeling software (including pre- and post-processors);
b. Version number for any modeling software used;
c. Meteorological data used, including years and station location for all surface data (1-minute and hourly, if applicable) and upper air data; and
d. Modeling report or text file describing the modeling methodology and input data.

Capture at Furnace #1

49. During the 2015 inspection, AMG stated that it was in the process of upgrading the motor of Furnace #1 from 300 Horsepower to 600 Horsepower and reactivating hoods located above the furnaces by removing the dampers blocking the ducting from the existing hoods to the Baghouses (Furnace #1 modificationsAMG stated that the estimated average capture efficiency that will be achieved at Furnace #1 is 95%, once modifications to the capture and control systems are completed. AMG estimated that the project would be completed by the end of January 2016.

50. Therefore, the designed capture efficiency of the baghouse capture and control system at Furnace #1 before and after completion of the Furnace #1 modifications was less than 100%.

Visible Emissions from Baghouse #1

51. In the response to the 2016 request, AMG provided a copy of a performance test conducted on June 16, 2015 at Furnace #1 (2015 Performance Test).

52. The 2015 Performance Test included Method 9 observations conducted at the Baghouse #1 stack. The table below indicates the run number, time, number of VE occurrences, and number of occurrences expressed as a percentage of accumulated occurrences in a 60-minute observation period:

Run Number	Time	Number of VE Occurrences	Percentage of Accumulated Occurrences in a 60-minute Observation Period
Run 1	12:28 – 13:28	35	14.6
Run 2	15:09 – 16:09	145	60.4
Run 3	17:38 – 18:38	79	32.9

53. In the response to the 2016 request, AMG provided copies of Method 22 tests AMG conducted at the Baghouse #1 stack from 2012 to 2015. The table below indicates the test date, the accumulated emission time, and the number of accumulated occurrences expressed as a percentage of accumulated emission time in a 60-minute observation period:

Date	Accumulated Emission Time (mm:ss)	Percentage of Accumulated Occurrences in a 60-minute Observation Period
9/14/12	04:05	7
7/9/14	11:14	19
7/11/14	28:23	47
3/31/15	12	20
6/20/15	05:41	9

SO_2 Emissions from Furnace #2

54. In the response to the 2017 request, AMG provided records of the monthly process weight rate at Furnace #2, the combined monthly SO_2 emissions rate from Furnace #2 and Furnace #1 calculated using sulfur mass balance, and an April 14 – 15, 2011 Performance Test measuring SO_2 emissions from Furnace #2 and Furnace #1. Based on this information, the monthly SO_2 emission rate from Furnace #2 exceeded the SO_2 emission limit, calculated in accordance with OAC 3745-18-06(E)(2), from July 2012 through at least December 2016.

PM Emissions from Roaster #2

55. In the response to the 2016 request, AMG provided a copy of a performance test conducted on April 11, 2014 at Roaster #2 (2014 Performance Test).

56. The 2014 Performance Test results showed that the PM10/2.5 condensable concentration (measured using EPA Method 202) was 0.014 grains per dry standard cubic feet.

57. Based on the maximum stack gas flow rate reported in the 2014 Performance Test and compliance method in the 2011 PTI, the annual PM10/2.5 emissions are calculated to be at least 15.8 tons per year.

SO_2 Emissions from Roasters #1 and #2

58. In the response to the 2017 request, AMG provided SO_2 1-hour average CEMS data from 2012 to 2017 (1-hour average CEMS data).

59. As computed from the 1-hour average CEMS data, the 3-hour rolling average SO_2 emissions from the dry scrubber while controlling emissions from Roaster #1 exceeded 78.1 lbs/hr once on April 20, 2014 and twice on June 20, 2014.

60. As computed from the 1-hour average CEMS data, from December 8, 2012 to March 1, 2017, the 3-hour rolling average SO_2 emissions from the dry scrubber while controlling emissions from Roaster #2 exceeded 78.1 lbs/hr a total of 234 times.

Bypassing Roasters #1 and #2's Control Devices

61. In the response to the 2016 request, AMG provided copies of emails and quarterly and semi-annual compliance reports submitted to OEPA detailing various events in which emissions bypassed control devices. These included events in which emissions from either Roaster #1 (e-fan events) or from Roaster #2 (pop-top events) bypassed the scrubber and baghouse.

62. From September 5, 2012 to September 10, 2014, Roaster #1 experienced 10 e-fan events.

63. From November 28, 2012 to June 28, 2016, Roaster #2 experienced 106 pop-top events.

Finding of Violations

Requested 2014 Modeling Data

64. AMG's failure to provide EPA with the 2014 Modeling information, as requested in the 2017 request, constitutes a violation of the record keeping, inspections, monitoring, and entry provision at Section 114(a) of the CAA, U.S.C. § 7414(a).

Capture at Furnace #1

65. From July 18, 2014, to the present, AMG violated Condition C.1.b(1)a. of the July 2014 PTI by operating a baghouse capture and control system that is not designed to achieve 100% capture at Furnace #1.

Visible Emissions from Baghouse #1

66. From September 14, 2012, to the present, AMG violated 40 C.F.R. § 63.11526 at least 8 times by discharging to the atmosphere visible emissions from the control device that exceed 5 percent of accumulated occurrence in a 60-minute observation period at Furnace #1.

SO_2 Emissions from Furnace #2

67. From September 2012 to at least December 2016, AMG violated OAC 3745-18-06(E)(2) of the Ohio SIP 50 out of 52 months by exceeding the SO_2 emission limit at Furnace #2, calculated in accordance with OAC 3745-18-06(E)(2).

PM Emissions from Roaster #2

68. From April 11, 2014, to the present, AMG violated Condition C.1.b.(1)b. of the 2011 PTI by exceeding the PM10/2.5 emission limit of 0.007 grains/dry standard cubic foot and 8.4 tons per year at Roaster #2.

SO_2 Emissions from Roasters #1 and #2

69. On April 20, 2014 and June 20, 2014, AMG violated Condition Part III.P014.A.I.1 of the 2002 PTI by exceeding the SO_2 emission limit of 78.1 lbs/hr at Roaster #1.

70. From December 8, 2012 to March 1, 2017, AMG violated Condition C.1.b.(1)d. of the 2011 PTI and Condition C.2.b.(1)d. of the October 2014 PTI by exceeding the SO_2 emission limit of 78.1 lbs/hr at Roaster #2 234 times.

Bypassing Roasters #1 and #2's Control Devices

71. From September 5, 2012 to September 10, 2014, AMG violated Condition Part III.P014.A.I.2.a of the 2002 PTI by failing to vent emissions from the Roaster #1 to a dry scrubber and a baghouse 10 times.

72. From November 28, 2012, to June 28, 2016, AMG failed to vent emissions from the Roaster #2 to a dry scrubber and a baghouse 106 times in violation of Condition C.1.b.(2)b. of the 2011 PTI and Condition C.2.b.(2)a. of the October 2014 PTI.

Environmental Impact of Violations

73. These violations have caused or can cause excess emissions of PM and SO_2:

PM: PM, especially fine particulates contains microscopic solids or liquid droplets, which can get deep into the lungs and cause serious health problems. PM exposure contributes to:

- irritation of the airways, coughing, and difficulty breathing;
- decreased lung function;
- aggravated asthma;
- chronic bronchitis;
- irregular heartbeat;
- nonfatal heart attacks; and
- premature death in people with heart or lung disease.

SO_2: Current scientific evidence links short-term exposures to SO_2 ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects including bronchoconstriction and increased asthma symptoms.

8/22/17
Date

Edward Nam
Director
Air and Radiation Division

CERTIFICATE OF MAILING

I, Kathy Jones, certify that I sent a Notice and Finding of Violation, No. EPA-5-17-OH-13, by Certified Mail, Return Receipt Requested, to:

Mr. Erik Sims
Environmental Manager
AMG Vanadium, Inc.
60790 Southgate Road
Cambridge, Ohio 43725

I also certify that I sent copies of the Notice and Finding of Violation by email to:

Jessica Kuenzli
Southeast District Office
jessica.kuenzli@epa.ohio.gov

Bob Hodanbosi, Chief
Division of Air Pollution Control
Ohio Environmental Protection Agency
bob.hodanbosi@epa.ohio.gov

On the 24th day of August 2017.

Kathy Jones, Program Technician
AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: 7016 1370 0001 5719 9582